

IN THE CLAIMS

1. (Original) A variant archaeal DNA polymerase having a modified amino acid sequence of a wild-type amino acid sequence, the modified sequence being in the amino-terminal amino acids that comprise a uracil-binding pocket in the wild-type polymerase whereby the variant polymerase has reduced affinity for uracil than the wild-type polymerase.
2. (Previously presented) The variant archaeal DNA polymerase according to claim 1 having a modified amino acid sequence of wildtype polymerases selected from the group consisting of *Thermococcus gorgonarius* (Tgo-Pol), *Thermococcus litoralis* (Tli-Pol), *Thermococcus sp. 9°N-7* (9°N-7-Pol), *Desulfurococcus* strain Tok (DTok-Pol), *Pyrobaculum islandicum* (Pis-Pol), *Archaeoglobus fulgidus* (Afu-Pol), *Sulfolobus acidocaldarius* (Sac-Pol), *Sulfurisphaera ohwakuensis* (Soh-Pol), *Sulfolobus solfataricus* (Sso-Pol), *Pyrodictium occultum* (Poc-Pol) and *Aeropyrum pernix* (Ape-Pol).
3. (Previously presented) The variant archaeal DNA polymerase according to claim 1 having a modified amino acid sequence of wildtype *Pyrococcus furiosus* DNA polymerase (Pfu-Pol).
4. (Previously presented) The variant archaeal DNA polymerase according to claim 3 having modifications in amino acids 1-40 or amino acids 78-130.
5. (Previously presented) The variant archaeal DNA polymerase according to claim 4 of SEQ ID NO.2 having modifications to amino acids 7, 36, 37, 90-97 or 112-119.
6. (Previously presented) The variant archaeal DNA polymerase according to claim 5 having modifications to amino acids Y7, Y37, V93, I114 or P115.
7. (Previously presented) The variant archaeal DNA polymerase according to claim 5 wherein the modification is Y7A.
8. (Previously presented) The variant archaeal DNA polymerase according to claim 5 wherein the modification is Y37A.
9. (Previously presented) The variant archaeal DNA polymerase according to claim 5 wherein the modification is V93Q.
10. (Previously presented) The variant archaeal DNA polymerase according to claim 5 wherein the modification is V93R.
11. (Previously presented) The variant archaeal DNA polymerase according to claim 5

wherein the modification is I114R.

12. (Previously presented) The variant archaeal DNA polymerase according to claim 5 wherein the modification is I114Q.

13. (Previously presented) The variant archaeal DNA polymerase according to claim 5 wherein the modification is P115Δ.

14. (Previously presented) The variant archaeal DNA polymerase according to claim 4 of SEQ ID NO.1 having modifications to amino acids 8, 37, 38, 91-98 or 113-120.

15. (Previously presented) The variant archaeal DNA polymerase according to claim 14 having modifications to amino acids Y8, Y38, V94, I115 or P116.

16. (Previously presented) The variant archaeal DNA polymerase according to claim 14 wherein the modification is Y8A.

17. (Previously presented) The variant archaeal DNA polymerase according to claim 14 wherein the modification is Y38A.

18. (Previously presented) The variant archaeal DNA polymerase according to claim 14 wherein the modification is V94Q.

19. (Previously presented) The variant archaeal DNA polymerase according to claim 14 wherein the modification is V94R.

20. (Previously presented) The variant archaeal DNA polymerase according to claim 14 wherein the modification is I115R.

21. (Previously presented) The variant archaeal DNA polymerase according to claim 14 wherein the modification is I115Q.

22. (Previously presented) The variant archaeal DNA polymerase according to claim 14 wherein the modification is P116Δ.

23. (Previously presented) The variant archaeal DNA polymerase according to claim 1 having modifications in the amino acid motif: E - - I - F / Y - - - Y - - D.

24-25. (Cancelled)

26. (Previously presented) A kit useful for polymerase chain reactions comprising a variant archaeal DNA polymerase as defined in claim 1.

27. (Previously presented) The kit of claim 26, further comprising DNA to be amplified, free bases, primers and combinations thereof.